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Shaylor E. Duhn
Date of Signature 3/18/02

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Malouf et al.

Examiner: Not Assigned

Application No.: 10/029,413

Group Art Unit: Not Assigned

Filed: December 20, 2001

Docket No.: 421/29/2

Confirmation No.: 3695

For: PURIFIED AND ISOLATED PLATELET CALCIUM CHANNEL NUCLEIC ACIDS
AND POLYPEPTIDES AND THERAPEUTIC AND SCREENING METHODS
USING SAME

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TRANSMITTAL OF FORMAL DRAWINGS

Dear Sir:

Please find enclosed a new set of formal drawings (17 sheets) for filing in the above-identified U.S. Patent Application.

Although a check is being submitted, the Commissioner is hereby authorized to charge any deficiencies of payment associated with the filing of this correspondence to Deposit Account No. 50-0426.

Respectfully submitted,

JENKINS & WILSON, P.A.

Date: 03/18/2002

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FIG. 1A

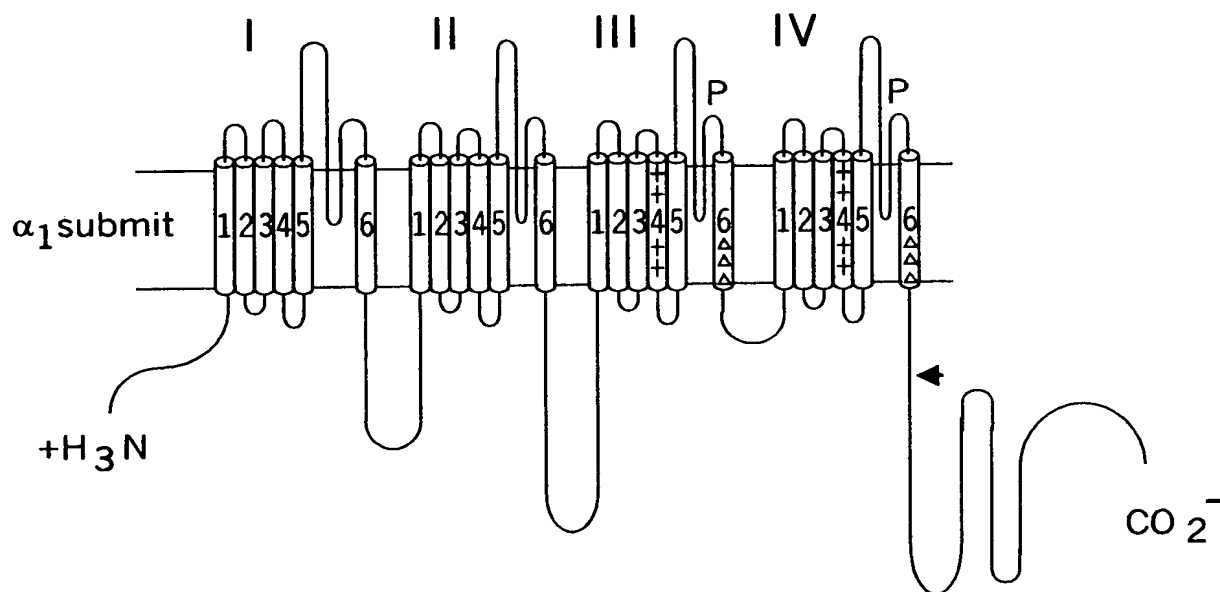


FIG. 1B

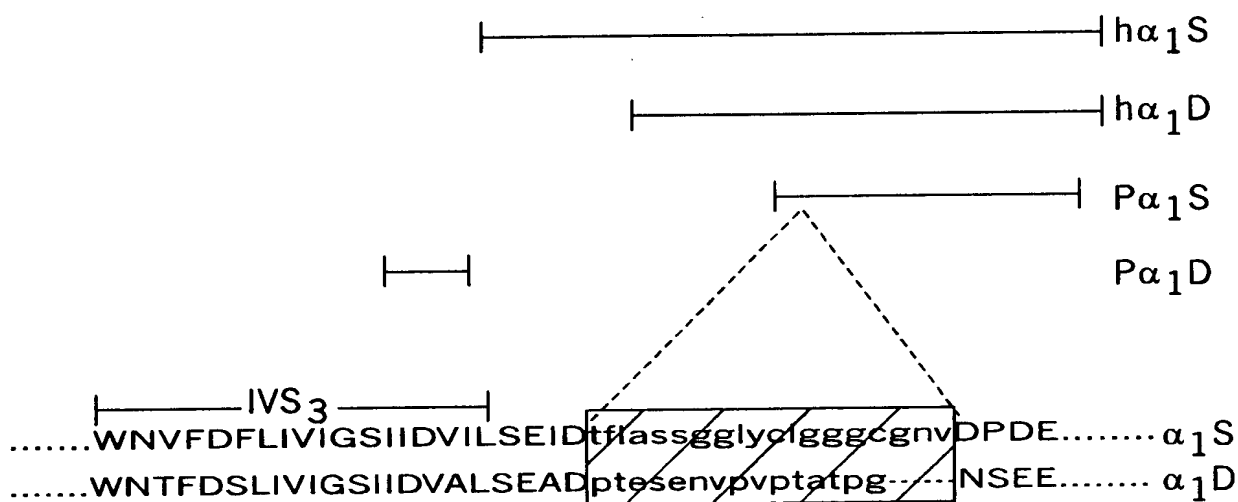


FIG. 1C



FIG. 1D

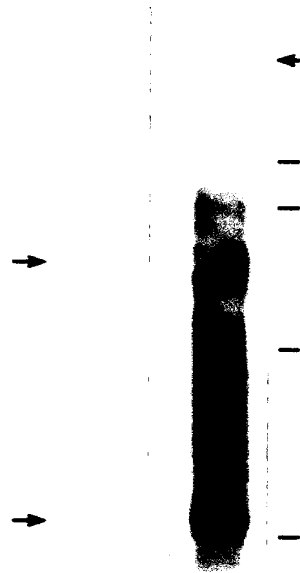


FIG. 2A

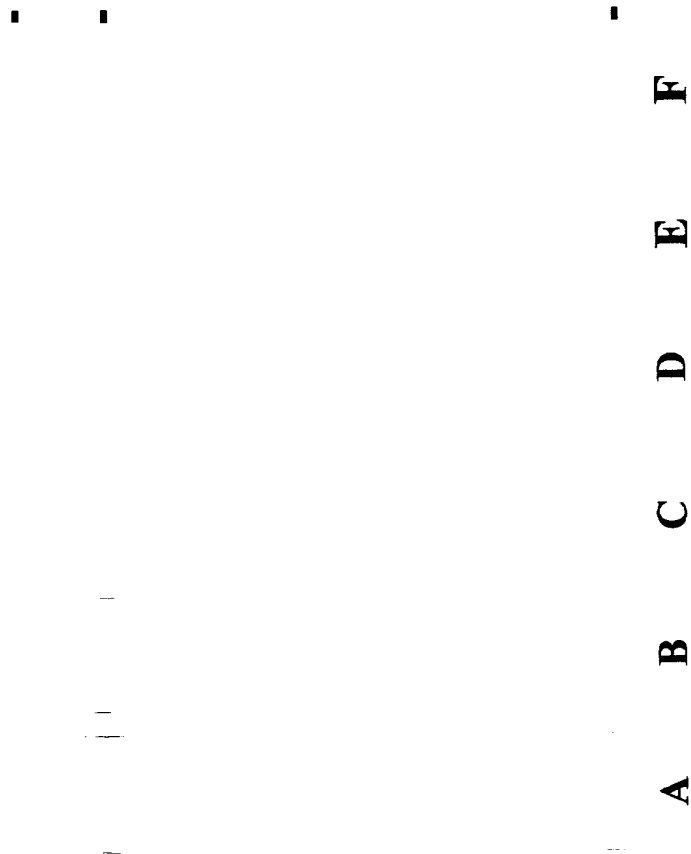
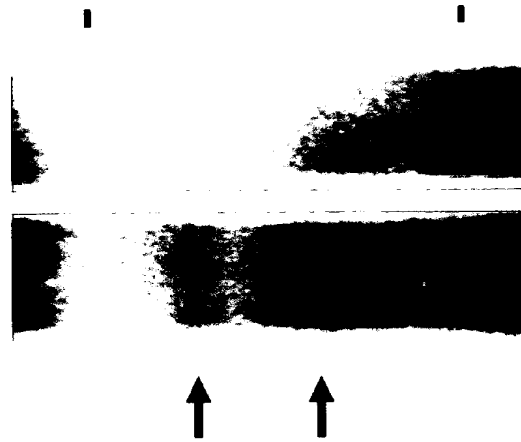


FIG. 2B



>ref|XM 001910.1| Homo sapiens calcium channel, voltage-dependent, L type,
 alpha 1S subunit (CACNA1S), mRNA, Length = 6615

FIG. 3A

Score = 79.8 bits (40), Expect = 1e-12
 Identities = 46/48 (95%)
 Strand = Plus / Plus

Query: 1 ctgattgtcatcggcagcatcattgacgtcatcctcagtgagatcgac 48
 |||||
 Sbjct: 3938 ctgattgtcattggcagcatcattgatgtcatcctcagtgagatcgac 3985

Score = 622 bits (314), Expect = e-176
 Identities = 462/510 (90%), Gaps = 1/510 (0%)
 Strand = Plus / Plus

Query: 49 gacccgacgagagtgcccgcatctccagcgcttctccgctgttccgggtcatgagg 108
 |||||
 Sbjct: 4043 gacccagatgagagtgcccgcatctccagcgcttctccgctgttccggtcatgagg 4102

Query: 109 ttgatcaagctgctgagccgcgaggcggtgcgcacgctgctccggaccttcatcaag 168
 |||||
 Sbjct: 4103 ctgatcaagctgctgagccgggcagagagtgcgaaacctcctgtggacgttcatcaag 4162

Query: 169 tccttccaggccctgccctacgtggctctgctcatcgtcatgctcttctcatctatgct 228
 |||||
 Sbjct: 4163 tccttccaggccctaccctacgtggctctgctcatcgtcatgctcttctcatctacgct 4222

FIG. 3B

```
Query: 229      gtcacggcatgcagatgcttgggaagatcgccatcgtcggacggaaccagataaacccg 288
               ||||| |r||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct: 4223     gtcacggcatgcagatgcttgggaagatcgcccttggtggatcgggacccaataaacccg 4282
```

```

Query: 289  acaacaattccagaccttccttcaggctgctgctcttcaggctgcgcacagggc 348
          |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||
Sbjct: 4283  acaacaattccagaccttcacaagctgctactgctcttcaggctgcacagggc 4342

```

```

Query: 349  gaggcgtggcaggagatcctgctggcctgcaggctacgggcagctgtgcgaccccgagtca 408
          ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct: 4343 gaggccctggcaggagatcctactggcctgcagctatgggaagctgtgtgacccagagtcg 4402

```

```

Query: 409 gactacctccctggggaggaggtataccttgggcaccgacttcgcttactactactc 468
          ||||| ||| ||||| ||||| ||| ||||| ||||| ||||| ||||| |||||
Sbjct: 4403 gactatgccccaggaggaggtacacatgtggcacaactttgcatactactactc 4462

```

```

Query: 469 agcttctacatgctcttgctcttctctctgacatcaacctcttctgctgctgctgac 528
|||||
Sbjct: 4463 agcttctacatgctcttgctcttctctctggtcatcaacctcttctgctgctgctgac 4522

```

Query: 529 aatttttgactacctcacc-ggactgggtcc 557
|||||
Sbjct: 4523 aatttttgactacctcaccgggactgggtcc 4552

FIG. 3C

>ref|NM_000069.1| Homo sapiens calcium channel, voltage-dependent, L type,
 alpha 1S, subunit (CACNA1S), mRNA, Length = 6160

Score = 79.8 bits (40), Expect = 1e-12
 Identities = 46/48 (95%)
 Strand = Plus / Plus

Query: 1 ctgattgtcatcggcagcatcattgacgtcatcctcagtgagatcgac 48
 |||||
 Sbjct: 3787 ctgattgtcatcggcagcatcattgacgtcatcctcagtgagatcgac 3834

Score = 622 bits (314), Expect = e-176
 Identities = 462/510 (90%), Gaps = 1/510 (0%)
 Strand = Plus / Plus

Query: 49 gaccgcgacgagagtgcgcgcacatctccagcgccctcttccgcctgttccgggtcatgagg 108
 |||||
 Sbjct: 3892 gaccagatgagagtgcgcgcacatctccagcgccctcttccgcctgttccgtcatgagg 3951

Query: 109 ttgatcaagctgctgagccgcgcgagggcggtgcgacgctgtccggaccttcatcaag 168
 |||||
 Sbjct: 3952 ctgatcaagctgctgagccgggagagagtgaggaacccctccgtgacgttcatcaag 4011

Query: 169 tccttccaggccctacgtggctctgtcctcatcgtcatgctcttcttcatctatgct 228
 |||||
 Sbjct: 4012 tccttccaggccctacgtggctctgtcctcatcgtcatgctcttcttcatctatgct 4071

FIG. 3D

Query: 229 gtcacggcatgcagatgtttgggaagatcgccatggtggacggaaacccagataaaaccgg 288
|||||
Sbjct: 4072 gtcacggcatgcagatgtttgggaagatcgcccttggcgatgggaccccaataaaaccgg 4131
|||||

Query: 289 aacaacaatttccagaccttccctcaggctgtgctgctgctccttcagggtgcgccacgggt 348
|||||
Sbjct: 4132 aacaacaacttccagaccttcccaacaagctgtgctactgctcttcagggtgtgcaacagggt 4191
|||||

Query: 349 gaggcgtggcaggagatcctgctggcctgcaggtaaggcagctgtgcgaccccgagtca 408
|||||
Sbjct: 4192 gaggcctggcaggagatcctactggcctgcagctatgggaagctgtgtgacccagagtcg 4251
|||||

Query: 409 gactacctccctggggaggagatataacctgcggacccgacttcgcctactactatccatc 468
|||||
Sbjct: 4252 gactatgccccaggggaggaggtacacatgtggcaccaactttgcatactactactatccatc 4311
|||||

Query: 469 agctttctacatgctctgtgcttccctgatcatcaacctcttctgtggctgtgatcatggac 528
|||||
Sbjct: 4312 agctttctacatgctctgtgcttccctggatcatcaacctcttctgtggctgtgatcatggac 4371
|||||

Query: 529 aatttttgactacctcacc-aggactgggtcc 557
|||||
Sbjct: 4372 aatttttgactacctcaccgggactgggtcc 4401
|||||

FIG. 3E

>gb|L33798.1|HUMCACNLA Human dihydropyridine-sensitive L-type calcium channel
 alpha-1 subunit (CACNL1A3) mRNA, complete cds, Length = 6160

Score = 79.8 bits (40), Expect = 1e-12
 Identities = 46/48 (95%)
 Strand = Plus / Plus

Query: 1 ctgattgtcatcggcagcatcattgacgtcatcctcagtgagatcgac 48
 |||||
 Sbjct: 3787 ctgattgtcatcggcagcatcattgacgtcatcctcagtgagatcgac 3834

Score = 622 bits (314), Expect = e-176
 Identities = 462/510 (90%), Gaps = 1/510 (0%)
 Strand = Plus / Plus

Query: 49 gaccccgacgagagtgcgcgcatctccagcgcccttctccgcctgttccgggtcatgagg 108
 |||||
 Sbjct: 3892 gaccccgacgagagtgcgcgcatctccagcgcccttctccgcctgttccgtgtcatgagg 3951

Query: 109 ttgatcaagctgtgagccgcgcgagggcgtgcgcacgctgctccggacccttcatcaag 168
 |||||
 Sbjct: 3952 ctgatcaagctgtgagccggcgagaggagtcggaaccctcctctgtggacgttcatcaag 4011

Query: 169 tccctccaggccctgccctacgtggctctgtcgtcatcgtctctcttcttcatctatgct 228
|||||
Sbjct: 4012 tccctccaggccctaccctacgtggctctgtcgtcatcgtctcttcttcatctacgct 4071
|||||

Query: 229 gtcacggcatgcagatgtttgggaagatcgccatgggtggacggaaacccagataaaacgg 288
|||||
Sbjct: 4072 gtcacggcatgcagatgtttgggaagatcgccctgggtggatgggacccaataaaacgg 4131
|||||

Query: 289 aacaacaatttccagaccttccctcaggctgtgctgctcttccaggtgcgccacgggt 348
|||||
Sbjct: 4132 aacaacaacttccagaccttcccaaacgtgtgctactgctcttccaggtgtgcaacagggt 4191
|||||

Query: 349 gaggcgtggcaggagatcctgctggcctgcaggtaaggcagctgtgcgacccccgagttca 408
|||||
Sbjct: 4192 gaggcctggcaggagatcctactggcctgcagctatgggaagctgtgtgacccagagtcg 4251
|||||

Query: 409 gactacctccccggggaggagatatacctggggcaccgacttcgectactactacttctc 468
|||||
Sbjct: 4252 gactatgccccaggggaggaggtacacatgtggcaccaccttgcatactactacttctc 4311
|||||

Query: 469 agcttctacatgctctgtgccttccctgatcatcaacctcttctgtggctgtgatcctggac 528
|||||
Sbjct: 4312 agcttctacatgctctgtgccttccctgggtcatcaacctcttctgtggctgtcatcctggac 4371
|||||

Query: 529 aattttgactacctcacc-ggactgggtcc 557
|||||
Sbjct: 4372 aattttgactacctcaccgggactgggtcc 4401
|||||

FIG. 3F

FIG. 4A

>ref|XM_001910.1| Homo sapiens calcium channel, voltage-dependent, L type,
 alpha 1S subunit (CACNA1S), mRNA, length = 6615

Score = 107 bits (54), Expect = 5e-21
 Identities = 63/66 (95%)
 Strand = Plus / Plus

Query: 1 tggaatgtgttcgacttcctgattgtcatcggcagcatcattgacgtcatcctcagtgag 60
 |||||
 Sbjct: 3920 tggaatgtgttcgacttcctgattgtcatcggcagcatcattgacgtcatcctcagtgag 3979

Query: 61 atcgac 66
 |||||
 Sbjct: 3980 atcgac 3985

Score = 507 bits (256), Expect = e-141
 Identities = 388/432 (89%)
 Strand = Plus / Plus

Query: 67 gaccccgacgagagtgcgccgcatctccagcgcttcttccgcctgttccgggtcatgagg 126
 |||||
 Sbjct: 4043 gacccagatgagagtgcgccgcatctccagcgcttcttccgcctgttccgtgtcatgagg 4102

Query: 127 ttgatcaagctgctgagccgcgagggcgctgcgcagctgctctggaccttcatcaag 186
 |||||
 Sbjct: 4103 ctgatcaagctgctgagccggcgagaggagtgcgaacctcctgtggacgttcatcaag 4162

FIG. 4B

```
Query: 187  tccttccaggccctgccctacgtggctctgctcattgctccttcttcatctatgct 246
          |||||
Sbjct: 4163  tccttccaggccctaccctacgtggctctgctcattgctccttcttcatctacgct 4222

Query: 247  gtcattcggcatgcagatgcttctgggaagatcgccattggtggacggaacccagataaacccgg 306
          |||||
Sbjct: 4223  gtcattcggcatgcagatgcttctgggaagatcgccattggtggaccccaataaacccgg 4282

Query: 307  aacaacaatttccagacccttccctcaggctgtgctgctgcttccaggctgcccacgggt 366
          |||||
Sbjct: 4283  aacaacaacttccagacccttcccaaaagctgtgctactgctcttccaggctgtgcaacagggt 4342

Query: 367  gaggcgtggcaggagatccttgcctggcctgcagggtacgggcagctgtgcgaccccgagtca 426
          |||||
Sbjct: 4343  gaggcctggcaggagatccttactggcctgcagctatgggaagctgtgtgaccagagtcg 4402

Query: 427  gactacctccctggggaggagtatacctggcgaccgaccttgcctactactacttcttc 486
          |||||
Sbjct: 4403  gactatgccccaggggaggagtacacatgtggcaccacttctgcatactactacttcttc 4462

Query: 487  agcttcttacctg 498
          |||||
Sbjct: 4463  agcttcttacctg 4474
```

FIG. 5A

>ref|XM_003238.1| Homo sapiens calcium channel, voltage-dependent, L type,
 alpha 1D subunit (CACNA1D), mRNA, Length = 7362

Score = 89.7 bits (45), Expect = 1e-15
 Identities = 45/45 (100%)
 Strand = Plus / Plus

Query: 1 ctcatcgtaatcggcagcattatagacgtggccctcagcgaagca 45
 |||||
 Sbjct: 4171 ctcatcgtaatcggcagcattatagacgtggccctcagcgaagca 4215

Score = 946 bits (477), Expect = 0.0
 Identities = 496/500 (99%), Gaps = 2/500 (0%)
 Strand = Plus / Plus

Query: 49 aactctgaagagagcaatagaatctccatcaccttttccggtcttttccgagtgatgcga 108
 |||||
 Sbjct: 4264 aactctgaagagagcaatagaatctccatcaccttttccggtcttttccgagtgatgcga 4323

Query: 109 ttggtgaagcttctcagcaggggggaaggcatccggacattgctgtggacttttatttaag 168
 |||||
 Sbjct: 4324 ttggtgaagcttctcagcaggggggaaggcatccggacattgctgtggacttttatttaag 4383

Query: 169 tcctttcaggcgctcccgatgtggccctcctcatagccattgctgttcttccatctatgcg 228
 |||||
 Sbjct: 4384 tcctttcaggcgctcccgatgtggccctcctcatagccattgctgttcttccatctatgcg 4443

FIG. 5B

Query: 229 gtcattggcatggcagatgtcttgggaaagtggccatgagagataacaaccagatcaatagg 288
|||||
Sbjct: 444 gtcattggcatggcagatgtcttgggaaagtggccatgagagataacaaccagatcaatagg 4503

Query: 289 aacaataacttccagacgttccccaggcgggtgctgctcttccagggtgtgcaacagggt 348
|||||
Sbjct: 4504 aacaataacttccagacgttccccaggcgggtgctgctcttccagggtgtgcaacagggt 4563

Query: 349 gaggcctggcaggagatcatgctggcctgtctcccagggaagctctgtgacctgagtca 408
|||||
Sbjct: 4564 gaggcctggcaggagatcatgctggcctgtctcccagggaagctctgtgacctgagtca 4623

Query: 409 gattacaacctcggggaggaggtatcatgtgggagcaactttgccattgtctatttcattc 468
|||||
Sbjct: 4624 gattacaacctcggggaggaggtatcatgtgggagcaactttgccattgtctatttcattc 4683

Query: 469 agnttttacatgctctgtgcatcttctga-catcaatctgtttgggtggctgcatcatgga 527
|||
Sbjct: 4684 agnttttacatgctctgtgcatcttctga-catcaatctgtttgggtggctgcatcatgga 4742

Query: 528 caatttcgactatctgacct 547
|||||
Sbjct: 4743 caatttcgactatctgacct 4762

FIG. 5C

>ref|NM_000720.1| Homo sapiens calcium channel, voltage-dependent, L type,
 alpha 1D subunit (CACNA1D), mRNA, Length = 7193

Score = 87.7 bits (44), Expect = 5e-15
 Identities = 44/44 (100%)
 Strand = Plus / Plus

Query: 1 ctcatcgtaatcggcagcattatagacgtggccctcagcgaagc 44
 |||||
 Sbjct: 4001 ctcatcgtaatcggcagcattatagacgtggccctcagcgaagc 4044

Score = 946 bits (477), Expect = 0.0
 Identities = 496/500 (99%), Gaps = 2/500 (0%)
 Strand = Plus / Plus

Query: 49 aactctgaagagagcaatagaatctccatcacctttttccgctctttccgagtgatgcga 108
 |||||
 Sbjct: 4094 aactctgaagagagcaatagaatctccatcacctttttccgctctttccgagtgatgcga 4153

Query: 109 ttggtgaagcttctcagcagggggaaggcatccggacattgctgtggacttttattaaag 168
 |||||
 Sbjct: 4154 ttggtgaagcttctcagcagggggaaggcatccggacattgctgtggacttttattaaag 4213

Query: 169 tcccttcaggcgctcccgatgtggccctcctcatagccatgctgttcttcatctatgcg 228
 |||||
 Sbjct: 4214 tcccttcaggcgctcccgatgtggccctcctcatagccatgctgttcttcatctatgcg 4273

FIG. 5D

Query: 229 gtcattggcatgcagatgtcttgggaaagtggccatgagagataaacaaccagatcaatagg 288
|||||
Sbjct: 4274 gtcattggcatgcagatgtcttgggaaagtggccatgagagataaacaaccagatcaatagg 4333
|||||

Query: 289 aacaataacttccagacgtttcccccaggcggctgctgctcttcaggctgtgcaacagggt 348
|||||
Sbjct: 4334 aacaataacttccagacgtttcccccaggcggctgctgctcttcaggctgtgcaacagggt 4393
|||||

Query: 349 gaggcctggcaggagatcatgctggcctgtctccagggaagctctgtgacccctgagtcca 408
|||||
Sbjct: 4394 gaggcctggcaggagatcatgctggcctgtctccagggaagctctgtgacccctgagtcca 4453
|||||

Query: 409 gattacaacctcggggaggagtagtatacatgtgggagcaactttgccattgtctatttcattc 468
|||||
Sbjct: 4454 gattacaacctcggggaggagtagtatacatgtgggagcaactttgccattgtctatttcattc 4513
|||||

Query: 469 agntttttacatgctctgtgcatttcttga-catcaactctgttttgggtggctgtcatcattgga 527
|||
Sbjct: 4514 agntttttacatgctctgtgcatttcttga-catcaactctgtttt-gtgggtgtcatcattgga 4572
|||

Query: 528 taatttcgacttatcttgaccc 547
|||||
Sbjct: 4573 taatttcgacttatcttgaccc 4592
|||||

FIG. 5E

>gb|M83566.1|HUMCACH1A Human neuroendocrine/beta-cell-type calcium channel
 alpha-1 subunit mRNA, complete cds, Length = 7193

Score = 87.7 bits (44), Expect = 5e-15
 Identities = 44/44 (100%)
 Strand = Plus / Plus

Query: 1 ctcatcgtaatcggcagcattatagacgtggccctcagcgaagc 44
 |||||
 Sbjct: 4001 ctcatcgtaatcggcagcattatagacgtggccctcagcgaagc 4044

Score = 946 bits (477), Expect = 0.0
 Identities = 496/500 (99%), Gaps = 2/500 (0%)
 Strand = Plus / Plus

Query: 49 aactctgaagagagcaatagaatctccatcacctttttccggtctttccgagtgatgcga 108
 |||||
 Sbjct: 4094 aactctgaagagagcaatagaatctccatcacctttttccggtctttccgagtgatgcga 4153

Query: 109 ttggtgaagcttctcagcaggggggaaggcatccggacattgctgtggacttttattaaag 168
 |||||
 Sbjct: 4154 ttggtgaagcttctcagcaggggggaaggcatccggacattgctgtggacttttattaaag 4213

```
Query: 169  tcctttcaggcgctcccgtatgtggccctcctcatagccatgctgttcttcatctatgcg 228
          |||
Sbjct: 4214  tcctttcaggcgctcccgtatgtggccctcctcatagccatgctgttcttcatctatgcg 4273

Query: 229  gtcattggcatgcagatgtttgggaaagtggccatgagagataaacaaccagatcaatagg 288
          |||
Sbjct: 4274  gtcattggcatgcagatgtttgggaaagtggccatgagagataaacaaccagatcaatagg 4333

Query: 289  aacaataacttccagacgtttccccaggcggtgctgcttcttcagggtgtgcaacaggc 348
          |||
Sbjct: 4334  aacaataacttccagacgtttccccaggcggtgctgcttcttcagggtgtgcaacaggc 4393

Query: 349  gaggcctggcaggagatcatgctggcctgtctcccagggaagctctgtgacctgagtc 408
          |||
Sbjct: 4394  gaggcctggcaggagatcatgctggcctgtctcccagggaagctctgtgacctgagtc 4453

Query: 409  gattacaacctcggggaggaggtatcatgtgggagcaacttggccattgtcttatctc 468
          |||
Sbjct: 4454  gattacaacctcggggaggaggtatcatgtgggagcaacttggccattgtcttatctc 4513

Query: 469  agnttttacatgctctgtgcatttctga-catcaatctgttgggtgctgcatcatgga 527
          |||
Sbjct: 4514  agtcttttacatgctctgtgcatttctgcatcttctgatcatcaatctgttt-gtggctgcatcatgga 4572

Query: 528  taatttcgactatcttgaccc 547
          |||
Sbjct: 4573  taatttcgactatcttgaccc 4592
```

FIG. 5F